Amendments to the Specification:

Please replace paragraph [0031] with the following amended paragraph:

[0031] The chamber 14 is a permanent part of the apparatus 10, and is lined with a removable, cleanable and replaceable chamber shield assembly 40. The shield assembly 40 protects the chamber wall 14 from deposition material originating at the target 16, ions and other particles of which emanate from the region of a high density plasma 25 in the chamber 11. The shield assembly 40 includes multiple parts, including a cylindrical sidewall or barrel shield 41 that primarily protects the sidewalls of the lower chamber wall portion 32 from deposition, an upper source shield 42 that primarily protects the chamber top portion 33 from deposition, a lower shield 43 that primarily protects the bottom of the chamber lower portion from deposition, and a susceptor shield 44 that primarily protects from deposition the peripheral portion of the susceptor 13 that surrounds the wafer 12.

Please replace paragraphs [0033], [0034] and [0035] with the following amended paragraphs:

[0033] The barrel shield 41 of the shield assembly 40 has an annular outwardly extending flange 46 that supports the flange portion of the barrel shield 41 on an annular shoulder 36 on the lower portion 32 of the chamber wall 14, making a low resistance thermal and electrical connection to the chamber wall 14. For example, a plurality of clamps 41a can be used to couple the barrel shield 41 to the annular shoulder 36. The clamps 41a can be loosened to insert and**[[/or]]** remove the barrel shield 41, and the clamps 41a can be tightened to provide the low resistance thermal and electrical connection between the barrel shield 41 and the annular shoulder 36 on the lower portion 32 of the chamber wall 14. Alternately, other fastening devices can be used.

[0034] The upper source shield 42 is fixed to the bottom of the chamber top portion 33, also thereby making a low resistance thermal and electrical connection to

the chamber wall 14. For example, a plurality of clamps 42a can be used to couple the upper source shield 42 to the bottom of the chamber top portion 33. The clamps 42a can be loosened to insert and[[/or]] remove the upper source shield, and the clamps 42a can be tightened to provide the low resistance thermal and electrical connection between the upper source shield and the bottom of the chamber top portion 33. Alternately, other fastening devices can be used.

[0035] The lower shield 43 is supported on an annular ring shaped block 38 fixed to or integral with the side wall of the chamber lower portion 32, also thereby making a low resistance thermal and electrical connection to the chamber wall 14. For example, a plurality of clamps 43a can be used to couple the lower shield 43 to the chamber using block 38. The clamps 43a can be loosened to insert and[[/or]] remove the lower shield 43, and the clamps 43a can be tightened to provide the low resistance thermal and electrical connection between the lower shield 43 and the bottom portion of the chamber. Alternately, other fastening devices can be used. Further, this lower shield 43 may be supported on a downwardly projecting lower flange 48 to the bottom of the chamber lower portion 32, as illustrated in **Fig. 1A**.

Please replace paragraph [0037] with the following amended paragraph:

[0037] Critical dimensions are accurately established and critical gaps are maintained in the face of potential thermal expansion. As illustrated in **Fig. 1B**, for example, the upper source shield 42 expands outwardly, as indicated by an arrow 51, as the upper shield 42 rises in temperature. A gap 52 between the outer rim of this upper shield 42 and the barrel shield 41 is established such that the gap 52 is at least as wide as the distance needed to avoid arcing between the shields 41 and 42. Similarly, as illustrated in **Fig. 1C**, the barrel shield 41 and the lower shield 43 respectively expand as indicated by arrows 53 and 54, as the shields 41 and 43 rise in temperature. Gap 55 between the barrel shield ~~portion~~ 4a and the lower shield ~~portion~~ 43 is established such that the gap 55 is at least as wide as the distance needed to avoid arcing between these shields 41 and 43. The lower shield 43 is mounted so as to

expand away from ~~shield portion~~ barrel shield 41 when heated, so that gap 56 enlarges rather than closes, thereby not causing arcing. Also, a gap 57 (**Fig. 1**) is maintained between lower shield 43 and susceptor shield 44 that remains sufficiently large upon the heating of the shields to avoid arcing. These gaps 52 and 55-57 are located so that dimensional changes take place where they are less critical, thereby avoiding increased likelihood of arcing.

Please replace paragraph [0039] with the following amended paragraph:

[0039] Referring to **Fig. 3**, an array of infrared lamps 70 is located so that the lamps 70 uniformly warm chamber shields 41-44 during preheating or operation. The lamps 70 are vertically oriented and generally equally spaced around the axis of the chamber 11, although other spacings that provide acceptable temperature distribution may be used. The lamps 70 are positioned so that radiant energy impinges on all of the shields 41, 43 and 44. During preheating or degassing of the shields, the susceptor 13 is lowered to the position shown so as to expose shield 44 to the lamps 70. The improved thermal conduction of the shields allow them to be heated to higher temperatures without affecting the process. In the illustrated embodiments, vertically or axially oriented quartz lamps expose most ~~fo~~ of the chamber shield components to thermal radiation. Preheating of the chamber can be carried out with these lamps to minimize the initial shock when the first wafer of a run is processed.

Please replace paragraph [0041] with the following amended paragraph:

[0041] Upper source shield 42 comprises top ring 410, sloped ring 420, bottom ring 430, and mounting element 440. Top ring 410 comprises inner surface 410a, top surface 410b, and an outer surface 410c. Sloped ring ~~portion~~ 420 comprises an inner surface 420a coupled to the inner surface 410a of the top ring 410, and an outer surface 420c coupled to the outer surface 410c of the top ring 410. Bottom ring 430 comprises inner surface 430a coupled to the inner surface 420a of the sloped ring 420,

an outer surface 430c coupled to the outer surface 420c of sloped ring 420, and a bottom surface 430d coupled to the inner surface 430a and the outer surface 430c. Mounting element 440 comprises a mating surface 440b coupled to the outer surface 420c of the sloped ring 420, an outer surface 440c coupled to the ~~top surface~~ mating surface 440b and the bottom surface 440d of the mounting element 440, and a lower surface 440e coupled to the bottom surface 440d of the mounting element 440 and the outer surface 430c of bottom ring 430.

Please replace paragraphs [0046], [0047] and [0048] with the following amended paragraphs:

[0046] Bottom ring 430 can have an outside diameter 427 of approximately 567 mm and a thickness 431 of at least approximately 6.3 mm. Bottom surface 430d of bottom ring 430 can be located a distance 432 from the mating surface ~~440d~~ 440b and the distance 432 be at least approximately 74 mm. Outer surface 430c can be coupled to the outer surface 420c of the sloped ring 420 using a curved surface 436 having a radius of at least approximately 19.0 mm.

[0047] Mounting element 440 can have an outside diameter 441 of at least approximately 605.0 mm. Top surface 410b of top ring 410 can be located a distance 443 from the mating surface ~~440d~~ 440b and the distance 443 can be at least approximately 42.4 mm. Mounting element 440 can have a thickness of at least approximately 6.3 mm.

[0048] Inner surface 410a, top surface 410b, and at least a portion of an outer surface 410c of top ring 410 can be grit blasted 490. In addition, inner surface 420a of sloped ring ~~portion~~ 420 can be grit blasted. Inner surface 430a, outer surface 430c, and bottom surface 430d of bottom ring 430 can be grit blasted. Furthermore, inner surface 420a of sloped ring ~~portion~~ 420, and the inner surface 430a, outer surface 430c, and bottom surface 430d of bottom ring 430 can be arc sprayed 491. For example, arc spray can comprise a twin wire arc spray using aluminum per specification 115-01-148.

In alternate embodiments, other surfaces can be grit blasted, and other surfaces can be arc sprayed.

Please replace paragraph [0056] with the following amended paragraph:

[0056] Inner surface 520a, bottom surface 520d, at least a portion of an outer surface 520c of the body portion 520, and at least a portion of a top surface 510b of flange 510 can be grit blasted 590. Furthermore, inner surface 520a, bottom surface 520d, at least a portion of an outer surface 520c of the body portion 520, and at least a portion of a top surface 510b of flange 510 can be arc sprayed 591. For example, arc spray can comprise a twin wire arc spray using aluminum per specification 115-01-148. In alternate embodiments, other surfaces can be grit blasted, and other surfaces can be arc sprayed.

Please replace paragraph [0065] with the following amended paragraph:

[0065] **Figs. 7A-7E** show schematic views of a ~~table shield~~ susceptor shield in accordance with an embodiment of the invention. ~~Table shield~~ Susceptor shield 44 comprises top ring 710, body portion 720, and bottom ring 730. Top ring 710 comprises inner surface 710a, top surface 710b, and a bottom surface 710d. Body portion 720 comprises an inner surface 720a coupled to the bottom surface 710d of top ring 710 and to the bottom surface 720d of body portion 720, and an outer surface 720c coupled to the outer surface 730c of bottom ring 730 and to the top surface 710b of top ring 710. Bottom ring 730 comprises a bottom surface 730d coupled to the inner surface 730a and the outer surface 730c. Inner surface 730a of bottom ring 730 is coupled to the bottom surface ~~720b~~ 720d of body portion 720.

Please replace paragraph [0070] with the following amended paragraph:

[0070] In one embodiment, ~~table shield~~ susceptor shield 44 comprises a single block of material. For example, lower shield 43 can be fabricated as a block of material such as stainless steel (316L). Table shield 44 comprises a height 701 of approximately 82.0 mm. Alternately, table shield 44 can comprise a different conductive material and have a different height. Outer surface 720c, outer surface 730c, top surface 710b, inner surface 710a, and at least a portion of the bottom surface 730d of bottom ring 730 can be grit blasted 790. For example, grit blast can comprise providing a minimum 4-5 micrometer roughness average (Ra) over the surfaces.